Gaze behaviour in musical trios: methodological issues and analytical claims

Sarah Vandemoortele,[*1] Kurt Feyaerts,[#2] Mark Reybrouck,[°3] Geert De Bièvre,[*4] Geert Brône,[#5] Thomas De Baets[*6]

[*]Music & Drama, LUCA School of Arts, Belgium

[#]Department of Linguistics, KU Leuven – University, Belgium

[°]Department of Musicology, KU Leuven – University, Belgium

[1]sarah.vandemoortele@luca-arts.be, [2]kurt.feyaerts@arts.kuleuven.be, [3]mark.reybrouck@kuleuven.be, [4]geert.debievre@luca-arts.be, [5]geert.brone@kuleuven.be, [6]thomas.debaets@luca-arts.be

ABSTRACT

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Investigations into nonverbal behaviour in ensemble playing have often focused on bodily movement. Even though the study of gaze behaviour would be a useful addition to this research, very few studies actually measured eye gaze during performance. Occasionally, observations regarding eye gaze are mentioned in studies that take on a broad view on nonverbal behaviour in ensemble playing (e.g. Davidson, 2012; Davidson & Good, 2002; Williamon & Davidson, 2002). Kawase (2009) claims to be the first to have measured gaze behaviour. In addition, he succesfully related it to synchronisation and leader-follower relationships (Kawase, 2014a; 2014b).

The studies by Kawase analyse gaze behaviour using video data. Our study implements the recently developed technique of mobile eye-tracking that guarantees a more fine-grained measurement of gaze behaviour and only a minimal loss of ecological validity. As such, our study aims to be a pioneering study – alongside Morgan, Gunes and Bryan-Kinns (2015) and Yamada et al. (2014) – both in terms of research interest and data collection method.

The aim of our study is to describe gaze behaviour in musical trios with a specific interest in those moments when gaze is directed at one of the partners, as well as their relation to characteristics of the score, bodily movement and sounding music. For this purpose four trios have been recorded using mobile eye trackers (Tobii Pro Glasses 2), external cameras and an audio recorder. The musicians were selected on the basis of their musical abilities as

judged by the chamber music coordinator of one of the contributing institutions (LUCA School of Arts). They neither played chamber music with each other before, nor did they ever play the composition chosen for the recording session. They were asked to rehearse a two-minute excerpt from Milhaud's *Suite* for violin, clarinet and piano during a single session according to the following schedule: individual practice (30') – rehearsal (30') – run-through – rehearsal (30') – run-through – run-through. Except for the individual practice the entire session was recorded.

Multiple options for data analysis are possible with the current data set. Our current focus is on melody transfers (i.e. moments where the melody in one voice is transferred to another). The excerpt from Milhaud's *Suite* contains 21 such moments and was chosen in order to test the hypothesis that 'melody takers' and 'melody yielders' would show distinct gaze behaviours. Thus, we describe the occurrence of 'gaze events' (i.e. moments when gaze is directed at one of the partners) in relation to melody transfers and compare this relationship per individual musician, per trio and per run-through. In a next stage, we intend to contextualise our observations further by looking at bodily movement and sounding music and at the relationship between rehearsals and run-throughs.

We expect that this kind of analysis can also be conducted from vantage points other than melody transfers. As the study is still ongoing, we mainly present the aims and methology. By sharing some preliminary results we also hope to demonstrate the potential of a multimodal data set for analysing the interactions between musicians.

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KEYWORDS

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